

BILL OF QUANTITIES					
CONSTRUCTION OF ILOVOTO IRRIGATION WATER PROJECT					
BILL 1.0 PRELIMINARIES					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
1.01	Construction of plant and personnel mobilization to site including setting up camp and demobilization	L/sum	1		
	Setting out				
1.02	Allow for setting out of the pipeline route, buildings and water tank extents in the presence of clients appointed site engineer	L/sum	1	50,000	50,000.00
	Sign Post				
1.03	Fabricate and installation of publicity steel sign post as directed by the client's appointed engineer	No.	2		
	Butt fusion (Rate per Joint)				
1.04	Butt fusion of HDPE Pipelines	L/sum	1		
	Total Carried to Grand Bill Total for BILL No. 1				
BILL 2.0 CONSTRUCTION OF WEIR OFFTAKES I & II					
ITEM No	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Supply, deliver the following materials and construct Weir Offtakes I and II				
2.01	Construct 2No. Weirs by use of concrete grade 20/20 (1:2:4). Use quarry ballast 1/2" x 3/4" and clean river sand. The weir shall be cured for 21 days. Works shall be done as per the working drawing.	M <sup>3</sup>	58		
2.02	Reinforcement bars D12	Kgs	410		
2.03	Reinforcement bars D10	Kgs	414		
2.04	Cypress timber 6" x 1"	Rft	600		
2.05	Cypress timber 3" x 2"	Rft	400		
2.06	Binding wire	Kg	20		
2.07	Wire Nails assorted	Kg	30		
2.08	Hard core	Tons	70		
2.09	Excavate Vegetable soils 300mm deep	M3	80		
2.010	Hacking on a rock surface	M2	40		
	Draw-Off System for the Gravity Mains to Ilovoto Tank				



	Use the following to construct intake chambers (with filter media surround) at each of the weirs from which water is gravitated to the Main Tank for distribution				
2.0.11	Construct Square Intake Chambers, 1.0 m x 1.0 m (internal measurements) Unvibrated concrete walled of breadth 0.2m. Use concrete class 20/20 (1:2:4) as shall be approved by site Engineer. Concrete volume inclusive of removable manhole cover and roof slab	m3	5.6		
2.0.12	Reinforcement bars				
2.0.13	Use Y10 bars, as ring beam reinforcement.	Kgs	100		
	Supply deliver and place the following to form the filter media surround in layers, the intake chamber				
2.0.14	Well graded Clear river sand	Tons	2		
2.0.15	Crushed stone gravel range 0.32cm size	Tons	2		
2.0.16	Crushed stone gravel range 0.5-0.75cm size	Tons	2		
2.0.17	Hardcore	Tons	2		
2.0.18	0.75cm thick Plastic Mesh to hold between layers	sq.m	8		
<b>C Draw-Off System</b>					
	Supply, deliver, set, fix , place the following for the draw-off system				
2.0.19	Sluice Gate 2.5" Installation and Manhole Chamber	No	2		
2.0.20	Clear pipe route of bushes, shrubs and cart away all arisings, Excavate for 450mm wide x 600mm deep channel and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	700		
2.0.21	75mm dia. HDPE pipe PN 10 (Supply, deliver, handle, set and fix draw off HDPE from sump from the reservoir section across Sand Dam Wall)	M	700		
2.0.22	RC anchorage of the pipeline on the bank	Cu.m	3		
	<b>Sub Total</b>				
<b>BILL 3.0 CONSTRUCTION OF ILOVOTO - MUTANDA GRAVITY MAINS</b>					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
3.0.1	Bush clear and excavate to pipe invert level 800 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	3,000		



3.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	42		
3.0.3	e.o in hard/ rock	m <sup>3</sup>	10		
3.0.4	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	2400		
3.0.5	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	600		
3.0.6	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2.5") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	42		
	<b>Supply and fit the following pipe fittings into the pipeline as directed</b>				
3.0.7	HDPE gate valve 2.5" diameter	No	6		
3.0.8	GI Reducing Tee 2.5" diameter by 2"	No	3		
3.0.9	Supply, deliver and install pressure relief valves 2" diameter fitted into 2.5" pipeline with all accessories	No	3		
3.0.10	Supply, deliver and install Double orifice air valve 2" diameter fitted into 2.5" pipeline with all accessories	No	5		
3.0.11	<b>Break Pressure Tank (BPT) At Chainage 2400m (From Source)</b>				
3.0.12	Supply, deliver and install a BPT set-up comprised of a 10m <sup>3</sup> Double Laminated Plastic Tank on a 0.5m high Masonry Platform with a control delivery end and supply end gate valves enclosed in 0.6m x 0.6m Masonry Chambers	item	1		
3.0.13	Masonry Platform	No	1		
3.0.14	Construct and Commission a Community Water Point, inclusive of Plumbing, Fittings & Consumer Water Meter in a lockable 0.75m X 0.75m chamber, as directed by Site Engineer.	item	1		
	<b>SUB TOTAL</b>				
<b>BILL 4.0</b>	<b>CONSTRUCTION OF MUTANDA JUNCTION - MBUINI- KITUIUNI GRAVITY MAINS</b>				
S/No	Item description	Unit	QTY	RATE	Amount Ksh



4.0.1	Bush clear and excavate to pipe invert level 800 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	1,700		
4.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	42		
4.0.3	e.o in hard/ rock	m <sup>3</sup>	10		
4.0.4	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	500		
4.0.5	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2.5") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	12		
4.0.6	Mbuini Dispensary BPT At Chainage 500m (From Junction)				
4.0.7	Supply, deliver and install a BPT set-up comprised of a 10m <sup>3</sup> Double Laminated Plastic Tank on a 0.5m high Masonry Platform with a control delivery end and supply end gate valves enclosed in 0.6m x 0.6m Masonry Chambers	item	1		
4.0.8	Masonry Platform	No	1		
4.0.9	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	1000		
4.0.10	Kituiuni BPT At Chainage 1500m (From Junction)				
4.0.11	Supply, deliver and install a BPT set-up comprised of a 10m <sup>3</sup> Double Laminated Plastic Tank on a 0.5m high Masonry Platform with a control delivery end and supply end gate valves enclosed in 0.6m x 0.6m Masonry Chambers	item	1		
4.0.12	Masonry Platform	No	1		
4.0.13	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors and PN20 end cap	m	200		



4.0.14	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	12		
	<b>Supply and fit the following pipe fittings into the pipeline as directed</b>				
4.0.15	HDPE gate valve 2.5" diameter	No	4		
4.0.16	HDPE Reducing Tee 2.5" diameter by 2"	No	1		
4.0.17	Supply, deliver and install pressure relief valves 2" diameter fitted into 2.5" pipeline with all accessories	No	3		
4.0.18	Supply, deliver and install Double orifice air valve 2" diameter fitted into 2.5" pipeline with all accessories	No	5		
4.0.19	Construct and Commission a Community Water Point, inclusive of Plumbing, Fittings & Consumer Water Meter in a lockable 0.75m X 0.75m chamber, as directed by Site Engineer.	item	2		
	<b>SUB TOTAL</b>				
<b>BILL 6.0 CONSTRUCTION OF KAEANI-KIVUUNI LINE</b>					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
6.0.1	Bush clear and excavate to pipe invert level 800 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	600		
6.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	24		
6.0.3	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	400		
6.0.4	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2.5") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	12		
6.0.5	Midway BPT At Chainage 500m (From Junction)				
6.0.6	Supply, deliver and install a BPT set-up comprised of a 10m <sup>3</sup> Double Laminated Plastic Tank on a 0.5m high Masonry Platform with a control delivery end and supply end gate valves enclosed in 0.6m x 0.6m Masonry Chambers	item	1		
6.0.7	Masonry Platform	No	1		



6.0.8	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	200		
	<b>Supply and fit the following pipe fittings into the pipeline as directed</b>				
6.0.9	HDPE gate valve 2.5" diameter	No	4		
6.0.10	HDPE Reducing Tee 2.5" diameter by 2"	No	1		
6.0.11	Supply, deliver and install pressure relief valves 2" diameter fitted into 2.5" pipeline with all accessories	No	3		
6.0.12	Supply, deliver and install Double orifice air valve 2" diameter fitted into 2.5" pipeline with all accessories	No	2		
6.0.13	HDPE End Cap DN 63 PN 20	No	1		
	<b>SUB TOTAL</b>				
<b>BILL 7.0 CONSTRUCTION OF NGIILANI-KITHANGATHINI LINE</b>					
<b>S/No</b>	<b>Item description</b>	<b>Unit</b>	<b>QTY</b>	<b>RATE</b>	<b>Amount Ksh</b>
7.0.1	Bush clear and excavate to pipe invert level 800 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	1,000		
7.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	24		
7.0.3	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	600		
7.0.4	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	12		
7.0.5	Midway BPT At Chainage 500m (From Junction)				
7.0.6	Supply, deliver and install a BPT set-up comprised of a 10m3 Double Laminated Plastic Tank on a 0.5m high Masonry Platform with a control delivery end and supply end gate valves enclosed in 0.6m x 0.6m Masonry Chambers	item	1		
7.0.7	Masonry Platform	No	1		

GOVERNMENT OF MAKUENI COUNTY

29 AUG 2024

*[Signature]*

Chief officer:  
Environment & Climate Change

7.0.8	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	400		
	<b>Supply and fit the following pipe fittings into the pipeline as directed</b>				
7.0.9	HDPE gate valve 2.5" diameter	No	4		
7.0.10	HDPE Reducing Tee 2.5" diameter by 2"	No	1		
7.0.11	Supply, deliver and install pressure relief valves 2" diameter fitted into 2.5" pipeline with all accessories	No	3		
7.0.12	Supply, deliver and install Double orifice air valve 2" diameter fitted into 2.5" pipeline with all accessories	No	2		
7.0.13	HDPE End Cap DN 63 PN 20	No	1		
	<b>SUB TOTAL</b>				
<b>BILL 8.0 CONSTRUCTION OF MUTANDA LINE RIDGE 2 DISTRIBUTION LINE</b>					
<b>S/No</b>	<b>Item description</b>	<b>Unit</b>	<b>QTY</b>	<b>RATE</b>	<b>Amount Ksh</b>
8.0.1	Bush clear and excavate to pipe invert level 800 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	900		
8.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	24		
8.0.3	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	500		
8.0.4	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	12		
8.0.5	Midway BPT At Chainage 500m (From Junction)				
8.0.6	Supply, deliver and install a BPT set-up comprised of a 10m <sup>3</sup> Double Laminated Plastic Tank on a 0.5m high Masonry Platform with a control delivery end and supply end gate valves enclosed in 0.6m x 0.6m Masonry Chambers	item	1		
8.0.7	Masonry Platform	No	1		



8.0.8	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	300		
	Supply and fit the following pipe fittings into the pipeline as directed				
8.0.9	HDPE gate valve 2.5" diameter	No	4		
8.0.10	HDPE Reducing Tee 2.5" diameter by 2"	No	1		
8.0.11	Supply, deliver and install pressure relief valves 2" diameter fitted into 2.5" pipeline with all accessories	No	3		
8.0.12	Supply, deliver and install Double orifice air valve 2" diameter fitted into 2.5" pipeline with all accessories	No	2		
8.0.13	HDPE End Cap DN 63 PN 20	No	1		
	<b>SUB TOTAL</b>				
	<b>GRAND SUMMARY</b>				
BILL 1.0	Preliminaries				
BILL 2.0	Weirs construction				
BILL 3.0	Construction of Ilovoto - Mutanda Gravity Mains				
BILL 4.0	Construction of Mutanda Junction-Mbuini - Kituiuni Gravity Mains				
BILL 5.0	Construction of Kaeani-Kivuuni Line				
BILL 6.0	Construction of Ngilani-Kithangathini Line				
BILL 7.0	Construction of Mutanda line - Ridge 2 Line				
	<b>SUB TOTAL</b>				
	<b>Contingencies</b>				
BILL 8.0	Allow 214,503 for contingencies to be expended at the discretion of the project manager				214,503.00
	<b>SUB TOTAL (BUILDER WORKS)</b>				

